

ABSTRACT

A "peer-to-peer" hierarchical routing protocol -- also referred to as Zone-based Hierarchical Link State Routing protocol (or "ZHLS") -- which incorporates location information into a novel "peer-to-peer" hierarchical routing approach. The network may be divided into non-overlapping zones. Aggregating nodes into zones conceals the detail of the network topology. Initially, each node knows its own position and therefore zone ID through a position determination unit, such as a Global Positioning System (GPS). After the network is established, each node knows the low level (node level) topology about node connectivity within its zone and the high level (zone level) topology about zone connectivity of the whole network. A packet may be forwarded by specifying the hierarchical address -- zone ID and node ID -- of a destination node in the packet header.